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(54) Title: COMPOSITIONS AND METHODS FOR STABLE ISOTOPE LABELLING OF BIOLOGICAL COMPOUNDS

(57) Abstract: The present invention is concerned the labelling of biological compounds with stable isotopes such that the three-di-
mensional structure of the biological compounds may be analysed by e.g. NMR spectroscopy. The invention employs microorgan-
isms that are grown on mineral media comprising carbon and nitrogen sources that contain stable isotopes to produce biomass that
is uniformly labelled with stable isotopes. The biomass may be autolysed to produce an autolysate. The biomass may further be
extracted with organic solvent to produce lipids. The (delipidised) biomass is hydrolysed to produce labelled amino acids and other
nutrients, which are used together with the autolysate, extracted lipids and further components to compose a culture medium for a
mammalian or insect host cells for the production of biological compounds that are uniformly labelled with stable isotopes. The
biological compound preferably is a biological acromolecule, such as e.g. a mammalian membrane protein.

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